Title of project: Increasing use of biocontrol in NYS greenhouses with a producer-based biocontrol mentoring network (Year 1) – NY Farm Viability Institute Grant

Project leaders: Elizabeth Lamb, Brian Eshenaur, Gary Couch

Cooperators: Karen Dean Hall, Graeme Murphy, John Sanderson

Abstract (for entire project):
While biocontrol methods have been used successfully for insect control as a part of Integrated Pest Management (IPM) programs for many years, there is a low adoption of these practices by NYS greenhouse producers. Lack of experience, either directly or through discussion with a successful practitioner, limits the expectation of success, and therefore use of the procedures. This project is intended to create a group of producers with direct experience in biocontrol, based on a tour of floriculture greenhouses in Ontario that are successfully using biological control of insect pests. Tour participants will share this experience through a variety of outreach activities that will allow other growers to gain practical knowledge in using biological control in greenhouse crops; on-farm workshops for growers who implement biocontrol practices in their own greenhouses, presentations to industry organizations (Southern Tier Growers, the Green Industry Show, etc.) or to grower groups through Cornell Cooperative Extension meetings, educational materials that can be used by CCE or IPM, etc. By presenting the information to a broader group of producers than can attend the tour, the tour participants become mentors for the use of biocontrol in greenhouse crops in NYS, providing greenhouse growers with another tool in their pest control kit.

Justification:
Biological control is just one of many insect control methods that can be used in the greenhouse. It has the advantages of being quite pest specific, fairly environmentally benign, and not tied to the same approvals as pesticide registration. Producers who have all the methods at their disposal can make effective decisions on pest control that best fits their situation and environment. This project is intended to provide NYS growers with the practical knowledge necessary to determine if biological insect control is appropriate for them and how best it can be used.

The initial part of the project is a tour to visit greenhouses in Ontario, Canada that are successfully using biological insect control. Ontario was chosen for the tour because of a concentration of growers using biological control in an area that can be toured in a relatively short period, without expensive travel to get there. A tour was chosen as producers can see the procedures 'in action' and discuss them with producers who have similar production, quality, environmental, etc. constraints.

Objectives:
To increase the use of integrated pest management in NYS greenhouses by providing growers the information they need to use biological control methods, with the intent of reducing reliance on chemical pesticides, increasing use of more environmentally sustainable pest control practices, and increasing returns to the grower in reduced costs or improved yields in order to improve the economic viability of the operations.

Procedures:

Milestone 1 - New York State greenhouse growers will gain hands-on experience with biocontrol in a commercial greenhouse setting. By observing the methods the Canadian commercial producers are using and discussing the environmental and economic benefits they have realized, the New York growers will see biocontrol as a viable option for insect control and implement it in their greenhouses.

Activity 1 - Project team will develop and advertise a tour of biocontrol greenhouses to 1000 New York greenhouse producers

1. Developed itinerary
    a. 6 Canadian greenhouses and 1 NY greenhouse (to incorporate small diverse greenhouse, typical of NY growers
    b. Biological Control Suppliers meeting with tour participants at Vineland Station
    c. Swarthout Bus Company
    d. Casablanca Winery Inn
2. Advertising
    a. NYSFI newsletter - 1700 on distribution list
    b. NYS IPM enewsletter
    c. Phone lists
    d. Presentations
        1. Floriculture Field Day (175 attendees)
        2. Southern Tier Growers Association (25 attendees)
    e. Websites
    f. Brochures
3. Other activities
    a. DEC pesticide recertification credits awarded – 5.25 for tour – as grower incentive
    b. Confirmation packets to host greenhouses and sponsors
    c. Handouts for tour

Activity 2 - Fifty New York State greenhouse growers will tour Ontario greenhouses which use biocontrol in floriculture crops

1. Tour held August 14-16, 2007
2. Final number of participants – 21 -11 growers, 3 CCE personnel, 2 IPM scouts, 1student, 1 biocontrol producer, 1 Cornell Plantations employee, 2 NYS IPM personnel
3. Handout packets completed (see attachments)
4. Orientation sessions – on bus before arriving, at Vineland Station with Graeme Murphy
5. Follow up with hosts and participants

Activity 3 - Project team will evaluate greenhouse producers participating in tour for increase in knowledge and implementation of that knowledge. (95% will have an increase in knowledge, 50% will trial the practices learned and 25% will implement some aspect of biocontrol on a continuing basis.)

1. Baseline data forms and project specific information completed and distributed – summary of additional question is included in attachments
2. Tour evaluation developed and distributed – results included in attachments
    a. 100% had increase in knowledge
    b. 100% planning to trial practices learned
3. An additional survey is planned for later in the season

Results
Milestone 1

The final arrangements for the tour were completed in this quarter, including finalizing the baseline data questions and preparing packets of handouts for the participants. A list of the materials that were included in the packets is attached. The tour was held August 14-16, 2007

Twenty-one people attended the Biocontrol Tour to Ontario, Canada. All attendees except Elizabeth Lamb and Brian Eshenaur, NYS IPM, are included in the list of Producers. Those that are not producers do not have complete baseline farm data, as they do not have farms. The comments section includes information on how they will participate in the performance target. Although the number of participants was lower than we had hoped, the smaller size of the group meant that everyone could see and hear what was being presented and could get their questions answered. It also encouraged the group to interact, and those connections will help in the process of developing and presenting outreach activities.

Baseline data forms were filled out on the bus, before we arrived at Vineland. Having everyone in one vehicle made for very interesting conversation, often on the subject of pest control. While we had intended to take only growers, adding in Extension people and scouts and Carol Glenister from IPM Labs led to more information exchange on biocontrol than we might have had otherwise.

We met Graeme Murphy, the Ontario Ministry of Agriculture, Food and Rural Affairs Greenhouse Floriculture IPM Specialist, at the Vineland Station for introductions and the history of biological control in Ontario. He had invited representatives of several companies that support the floriculture industry with biocontrol: Ron Valentin - Biobest Canada, Mike Short – EcoHabitat Agri Services, Margarethe Fast – Global Horticultural Inc., and Anne Marie Cooper PlantProducts Co. His presentation evolved into an excellent discussion of what encouraged the use of biocontrol in Ontario and why, how it is working and how it can be made to work.

The greenhouses we visited in Ontario were predominantly large wholesale growers, quite different from the retail growers who made up the majority of the participants. While this might have made it intimidating, the host growers did an excellent job at explaining how they had started with biological control, what hurdles they had had to overcome, and what worked for them. Each site had something different to demonstrate, from flowering plants to vegetables to cut flowers. Graeme Murphy accompanied us to all the greenhouses and at several consultants Mike Short and Anne Marie Cooper were also available to answer questions.

We passed the Stokes Seed Trials several times on our route and the growers asked if we could stop. We added it to the Thursday morning itinerary and spend a half an hour there. The evaluation was filled out in the bus on the way back to New York. The summary of results is in the attachments.

The final greenhouse, near Buffalo, was a retail greenhouse. It was unintentional, but by showing retail growers what could be done in a retail greenhouse with biocontrol, the information they had learned the previous day became more real. You could almost see their minds changing from ‘this won’t work for me’ to ‘I think I could try this’.

Karen has done most of the follow-up activities, with thank you letters to our hosts. I have submitted, with Mary Woodson, the IPM writer, an article to GrowerTalks covering the tour and some of the methods we learned there. We also contacted all the growers to send them some additional factsheets on pest control, IPM and the use of biocontrol in greenhouses.

Milestone 2

Planning has begun for a series of programs on biocontrol in greenhouses that will include the growers that participated in the tour. Brian Eshenaur and I met with Sharon Webber, Erie County, and Walt Nelson, Monroe County to develop Greenhouse Update programs for the spring. I also discussed the possibility of having growers present information from the tour at a meeting of the Southern Tier Growers Association, with Lisa Massi, president.

Materials from the tour were included in the IPM display for the 125th Anniversary Open House at the New York State Agricultural Experiment Station in Geneva. Approximately 3000 people attended, and while most were not growers, there was still a great deal of interest in biological control.

Implications

While it is too early to know who will actually implement biological control, 93% said they are planning on trying biocontrol next season. The tour itself was a success, based on survey comments, but also based on my observation of the participants. They easily shared information amongst themselves and were a very cohesive group. Also, 92% are willing to share what they learned with others through outreach. As we start doing the outreach activities, I think that willingness and their experiences seeing biocontrol in action will produce many success stories.

As a small success story, on returning, Tom Palomaki of Lucas Greenhouses immediately rescued some old eggplant seedlings he was about to throw out and set them up in his greenhouse as indicator plants for whitefly, one of the methods we had seen used on the tour.